

Conducting Business with the IA DOT Office of Bridges & Structures



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Table of Contents

Introduction	3
Key Contacts	3
Agreements	3
Project Development – Timeline and Expectations	4
100% Unapproved Plan Submittal	4
Review Period/Review Comments	5
Final Plan Submittal	6
Second Review	6
Turn-in to the Office of Contracts	6
Sheet Swapping	6
Electronic Plan Submittal (CD)	7
Construction Issues	7
Plan Revisions	8
Shop Drawing and Shoring Plan Review	8
Evaluations	8
Scope of Work	9
Complexity	9
Work Category	9
Design Fee	<u>109</u>
Adherence to IA DOT OB&S Guidelines	10
OB&S Design Manual and AASHTO Standard Specs. / LRFD Code	
OB&S Plan Checklist	
CAD Drafting Quality	10
Project Issue Resolution and Initiative	10
Constructability of Design	11
Calculations	11
Schedule Delivery	11
Accelerated Schedule	11
Administration	11
Score	12

Introduction

The aim of this document is to aid consultants in conducting business with IA DOT Office of Bridges and Structures (OB&S). Standard policies, timelines, and expectations for structural design have been highlighted.

Key Contacts

Consultant Coordination Section:

Ronald Meyer, P.E. – contracting, overall coordination, authorizations for payments

Tim Dunlay, P.E. – project review coordinator

~~Ray Gustafson, P.E. – project review coordinator~~

Mark Harle, ~~E.I.P.E.~~ – project review coordinator

Steve Maifield, P.E. – project review coordinator

~~Dennis Walker~~[Brett Kloss](#) – shop drawing coordinator

Judy Whitney – office assistant, records, processing of invoices

Other Office Personnel:

Norm McDonald, P.E., Bridge Engineer

Gary Novey, P.E., Assistant Bridge Engineer

Ahmad Abu-Hawash, P.E., Chief Structural Engineer

Mike Nop, P.E., Software ~~Engineer~~[Program Support](#)

Stuart Nielsen, P.E., Methods Engineer

Ken Dunker, P.E. – Bridge Design Manual

Kimball Olson - Aesthetics

Thayne Sorenson – Lead Technician Overseeing OB&S CADD Operations

Agreements

Upon OB&S' request, consultants are asked to prepare a scope and budget proposal for a project. Compensation for the scope and budget should be negotiated in advance and if approved, a separate Agreement/task included within the budget.

The OB&S will draft the formal Agreement, which follows IA DOT boilerplate. If the maximum amount payable of the agreement exceeds \$50,000, the Office of Audits prepares a pre-audit report (typically two weeks). Appropriate OB&S staff will review proposal and provide recommendations to clarify scope and negotiate budget (timeline dependent upon priorities). Prior to contract execution, a staff action for DOT management authorization is drafted and approved (typically 3 days). If federal funding and/or bordering state funds are used, approvals will take additional time.

Project Development – Timeline & Expectations

Contained within a contract for design work are deadlines for submittals. The two typical submittals are “100% Unapproved Plan Submittal” and “Final Plan Submittal.”

Deadlines are set starting with proposed letting date of the project and working backwards. Our OB&S’ plan turn-in to the Office of Contracts is 7:00 AM on the first Tuesday of the month two months prior to the letting month. OB&S uses the prior day (Monday) as this deadline for practical purposes. For example, if a plan is scheduled for a July letting, the plan turn-in deadline is the first Monday in May. For “large” (combined) or unique projects, an additional month may be necessary for advertising and for review. The contract for a specific project governs all deadlines and submittals, unless mutual e-mail acknowledgements of schedule changes are made.

Subsequent sections contain an overview of what is expected of each submittal and what the OB&S review period includes.

- 100% Unapproved Plan Submittal

For routine projects, the 100% Unapproved Plan Submittal is typically two months plus two weeks prior to the Office of Contracts turn-in date. For example, a July letting/May turn-in to Contracts, the 100% Unapproved Plan Submittal would be due in the middle of February. This timeline gives the Consultant Coordination Section time to work the review into their priorities, to conduct the review, to seek input from the Districts and other central offices, and time for any necessary changes to be completed in time for Final Plan Submittal.

The 100% Unapproved Plan Submittal is to consist of a CD or link to an FTP site containing the electronic MicroStation design files and any special materials such as Special Provisions. The electronic files should be in final form in level and color, as well as to scale, as the plans will be plotted using batch plotting. CAD drafting adequacy is a separate category within IA DOT evaluations. Roadway plans completed by the consultant should be submitted as a PDF file as part of the 100% Unapproved Plan Submittal.

The 100% Unapproved Plans are expected to be in final form with no missing details. Any unresolved issues should be flagged, so that the reviewer can easily identify such instances. However, every effort should be made to resolve outstanding issues prior to the 100% Unapproved Plan Submittal. Consultant initiative to resolve outstanding issues is a separate category in the evaluations.

- Review Period/Review Comments

When a 100% Unapproved Submittal arrives in the OB&S, the electronic files are loaded onto the IA DOT project directory and plotted in color. The review of the color plan sheets is twofold, for CADD related issues and for plan accuracy.

The CADD related review begins with the batch plotting. If the electronic files are not scaled correctly or found to be not reviewable due to other issues, the consultant will be advised of the problems and a second submittal of the electronic files should be completed once the files are corrected. The primary focus of the CAD review is for color and leveling issues. Minor color and leveling errors will be noted and returned with the review plan comments.

OB&S procedure is to provide the contractor with color plots of the completed design files to aid their construction. The OB&S has received positive feedback from the construction industry on this practice.

The second portion of the OB&S review process includes an in-depth review of the plan details and coordination with other IA DOT offices. Plans are reviewed for accuracy and adherence to OB&S Bridge Design Manual (BDM) policy, AASHTO Standard Specs. /LRFD code, and the OB&S Plan Checklist. The checklist was initiated in 2000 to address common plan errors and design oversights. The checklist is updated twice a year to reflect changes in OB&S policy and to alert designers of recent common errors and oversights. It basically is our quality control guide. The checklist is available on-line at: <http://www.dot.state.ia.us/bridge/standard.htm>.

The OB&S Bridge Design Manual is also available at the above webpage. The BDM is currently a work in progress as some sections are being re-written. Designers are charged with being familiar and consistent with OB&S policy as stated in the BDM. Prior to seeking assistance of the Consultant Coordination staff, designers should review design policy in the BDM. If the BDM does not address the designer's questions, then contact should be made with the Consultant Coordination Section to seek policy clarification. Consultant initiative may also be impacted on the evaluation form for seeking information on published policy.

Once the reviewer has completed the initial plan review, all comments on both CADD and policy issues will be forwarded to the consultant. The plan set, with comments, will also be distributed to other IA DOT offices including Construction, Design, Materials, Districts, RCE, etc. This provides other IA DOT staff to review the plan details with comments and provide any additional feedback. Typically, a two to three week review period is given to other IA DOT offices. Any comments provided by other offices will be evaluated and forwarded to the design consultant for inclusion in the final plan submittal. In instances where further discussion is needed with other offices to resolve comments, OB&S should be informed of any correspondence and resolutions. The final date that OB&S will accept comments from other offices will be indicated on the title

sheet of the reviewed copy of the plans returned to the consultant. The goal of the Consultant Coordination Section is to give the consultant three weeks to incorporate review comments before the Final Plan Submittal.

- Final Plan Submittal

The Final Plan Submittal should be two weeks prior to the plan turn-in to Contracts date. The submittal includes the PDF plan set file in conformance with the File Specifications for Electronic Plans Submittals to the Iowa DOT along with the BIAS file in transfer file format and the database file (.mdb), as well as any Special Provisions required by the plans. The PDF plan set, Special Provisions and BIAS files should be submitted electronically either by consultant FTP site, e-mail, CD via mail or DOT FTP site. For submittal using the DOT FTP site, see the document Transferring Electronic Plans to the Iowa DOT on the Office of Bridges and Structures internet site. No electronic Microstation CAD plan files should be sent in with the Final Plan Submittal.

- Second Review

The reviewer will verify that all comments have been addressed and that the plan set is complete and ready for the turn-in to the Office of Contracts. If any additional comments or changes are needed, the two week window allows for any last minute updating of plan sheets and other unresolved issues. The BIAS file will also be checked, as well as any other special documents.

- Turn-In to Office of Contracts

Plan turn-in to the Office of Contracts is typically done anytime between the Final Plan Submittal and the deadline date on the first Monday two months prior to letting. The reviewer submits the PDF plan set and BIAS file electronically to Contracts. The reviewer submits the Special Provisions to the Specifications Section electronically. Over the next few weeks, the Office of Contracts reviews the plan set for accuracy and correctness in areas such as Specifications, Bid Items, Method of Measurement, and Basis of Payment, etc.

- Sheet Swapping

Occasionally the Office of Contracts will request a change to the plan set either for a clarification in language or other issues. The OB&S commonly refers to this practice as “sheet swapping.” Contracts is to notify the OB&S of any necessary changes, whereupon the reviewer will evaluate the issue. The reviewer passes this information onto the consultant and requests a new corrected PDF plan sheet(s). New PDF plan sheet(s) should be sent electronically via e-mail to the reviewer, who forwards to Contracts. All sheet swapping must be completed prior to the Office of Contracts last day for plan changes critical date or in an agreed to timeframe.

It should be noted that the OB&S makes every effort to avoid sheet swapping by completing a thorough review of the plan set before the turn-in to Contracts. If sheet swapping is due to a consultant error or omission, the evaluation will reflect this. Sheet swapping for other reasons will not impact the evaluation score. Again, sheet swapping should only be needed in extreme cases and not viewed as routine. Extensive sheet swapping can result in the letting date being moved back and viewed negatively as a missed letting.

- [Addendum](#)

Plans can be altered after they have gone to print by issuing an addendum. An addendum is simply a document describing changes, additions or otherwise, to a plan set that has already been sent to contractors for bid preparation. [The addendum format is typically text describing the changes, if detailed drawings are required they are typically done on 8.5"x11" sized paper. Addendum format should be coordinated by the reviewer with the Office of Contracts prior to preparing the addendum.](#) The addendum informs contractors of changes prior to a bid being placed so that all bidders are aware of the changes. Should errors or omissions be noted after the sheet swapping period, evaluation of the need for an addendum should be reviewed. In some instances, an addendum can be skipped and a plan revision issued [following the letting](#) to correct the change. In other instances, both an addendum and revision [are may be](#) necessary.

- Electronic Plan Submittal (CD)

After the Office of Contracts has had their time to review the plan set and any needed corrections are made, the final plan CD containing the most recent edition of MicroStation V8 files may be submitted. This is done at the end of the month prior to letting. The OB&S loads them into the project directory for storage and preserves the CD containing the final files as backup.

- Construction Issues

Construction issues may arise during the course of construction of a project, due to many reasons including contractor error, differing field conditions from what was given in the plan set, or design errors. When a construction issue is discovered, the contractor will alert the IA DOT. The OB&S will review the issue and decide if the consultant's input is needed. If the issue is minor in nature and the design intent is not altered, the IA DOT will proceed with a remedy to the issue without the consultant's input. The consultant may be copied on a response.

When a construction issue needs the designer's input, the OB&S will notify the designer of the issue and discussions on a solution will begin. Negotiations may be necessary between the OB&S and the consultant regarding level of effort needed. If the error was caused by the contractor, the consultant may be asked to track their time for the purpose of the IA DOT recovering cost from the contractor. Consultants may be asked to work on their own time to resolve a plan error or omission, per the "Errors and Omissions"

article of the Agreement. Time worked on the project, but not billed, should be annotated as such on subsequent invoices.

- Plan Revisions

Plan revisions may be needed to document changes, including a different construction method, plan alteration, or plan error. Plan revisions are done at the request of the Consultant Coordination Section. Consultants should not initiate plan revisions without the concurrence of the Consultant Coordination Section. With revisions, incorrect text / details are never deleted, but rather crossed-through, new information added, and ~~flowered~~clouded. Revisions are to be in conformance with the OB&S Creating Revisions guidelines available at <http://www.iowadot.gov/bridge/v8docs.htm> on the OB&S web site. These revision instructions shall be followed and adhered to when performing revisions. Revision dates and reason for change are given on the detail sheet, as well as summarized on the revision sheet (1A). The title sheet revision box is filled out and updated signature provided.

- Shop Drawing & Shoring Plan Review

Refer to the OB&S BDM for relevant information concerning post-letting contractor submittal reviews. Plans specify the initial submittals to go directly to the consultants. Consultants in turn send reviewed documents through the OB&S shop drawing coordinator, who distributes copies appropriately.

The Office of Bridges & Structures shall be notified of direct contractor/fabricator contacts in writing. The Consultant is reminded that requests for information (RFIs) and alterations to the intent of the design plans submitted directly from contractor or their subcontractors may be considered as extra work and must receive approval prior to time being charged to this project. Protocol to request changes and/or clarifications is as follows:

Contractor → RCE → Office of Construction → Office of Bridges & Structures → Consultant

Responses from the Consultant are communicated in reverse order. Some questions are resolved internally at the Iowa DOT, at various office levels, while others take the full route to keep the consultant apprised of and involved in the decision making process.

Evaluations

According to PPM 300.12, “The evaluation shall consider:

1. The quality and adequacy of work performed.
2. The ability to meet established schedules and budgets.
3. General administration of the contract, including substantiation of cost billings, payments to subconsultants, and documentation of claims.

4. Cooperation shown by the consultant in responding to requests for information and in revising procedures and products according to directions.
5. Coordination exhibited by the consultant in communication with the Department, subconsultants, agencies and others to accomplish tasks and resolve problems.
6. Ingenuity displayed in solving unique and unusual design problems encountered during performance of contract objectives.
7. The ability to obtain an acceptable end product with appropriate department staff guidance.”

Various sections of the IA DOT OB&S evaluation form are highlighted and explained below.

Evaluations are done on a per Agreement basis, so should there be multiple plan sets involved within an Agreement, an average score for the work is taken.

Evaluations are provided to prime and subconsultants separately.

- Scope of Work

The scope of work is a brief description of the structure features or work involved. Items that would be typically listed include, length and width of structure, type, crossing, span lengths, abutment type, pier type, foundation type, general design methodology, and other special considerations.

Sample Scope of Work: “Design of Stage I of dual 69.6 m x 4.96 m bulb tee C beam bridges with integral abutments, slotted deck drain, pile foundations, R.A. skew, I-235 mainline bridge aesthetic details, 17th Edition AASHTO.”

- Complexity

The Complexity rating is an added feature to the revised evaluation forms. In an attempt to better rate the level of difficulty in design of projects, we have given point values to structural component groups that cover foundation type, pier type, superstructure type, abutment type, as well as items such as skew, beam tapers, curved alignments, etc. The above criteria are input into a scoring matrix and the outcome is a level of difficulty score between 1 and 10 with 10 being the most difficult. Complexity is recorded to establish a firm’s success level for a given project complexity. It will be used as one criterion for evaluation of overall performance.

- Work Category

The Work Category coding follows the Iowa DOT prequalification categories. The categories are as follows:

- 215 Culvert and Standard Bridge Design
- 216 Non-Standard Non-Steel Bridge Design
- 217 Steel Bridge Design

- Design Fee

The Design Fee documents the amount of effort necessary to complete the design work. Design fee quantifies work given to a specific firm. Subconsultant work is tracked separately. Design Fee will be used as one criterion in future selections and in establishing statewide consultant work assignments.

- Adherence to IA DOT OB&S Guidelines:

Deficiencies of plan flaws are weighed on the basis of impact on a per plan set basis.

OB&S Design Manual and AASHTO Standard Specs. / LRFD Code

Deductions will be taken for errors relating to IA DOT policy and standard practices as noted in the Bridge Design Manual and OB&S Methods Memos, as well as violations of AASHTO / LRFD. Designers are responsible for being up to date on OB&S policies. Consultants will be notified of updates to the BDM and Methods Memos through the monthly Iowa DOT Manual Updates e-mail. Subscribe to these updates at the OB&S webpage.

OB&S Plan Checklist

The IA DOT OB&S Plan Checklist is updated biannually. Consultants are responsible for using the current checklist to develop their 100% Unapproved Plan Submittal. The current version of the checklist is always available on-line at the OB&S webpage.

Consultants should adapt to changes in policy during their plan development effort. If effort to adopt a change will significantly impact work effort, consultants are asked to review with the Consultant Coordinator prior to proceeding to document the level of effort involved.

- CAD Drafting Quality

CAD files should be correct in level, weight, and color. OB&S policy on these items has been in place since 2000. ~~The switch to V8XM is now complete.~~ As plans are printed from batch plotting, it is imperative that CADD guidelines are followed.

- Project Issue Resolution and Initiative

The consultant is expected to be proactive in seeking resolutions to design issues. Any conflicts with surrounding structures, either roadway or other, should be brought to the attention of the OB&S, so that there are no inconsistencies.

Prior to contacting IA DOT staff about a design policy questions, the designer should first review the BDM and related Methods Memos for current design information. If these two references do not contain the answer to a specific design question, then the OB&S should be contacted.

The consultant will be evaluated on being proactive and complete during their design development work.

- Constructability of Design

Design plans should be constructible. The BDM has some constructability criteria, but common sense should also be applied during the design phase. Adequate details to portray what is being constructed are necessary.

- Calculations

Calculations are due at the time of delivery of final CADD files on new bridge designs. Our preference is not to have to remind consultants of this deadline. We are looking for completeness and organization, however, are not interested in extravagance. Hand calculations, if that's how calculations were preformed, are fine. The calculations should contain: a table of contents to index the major sections of the calculations required to design and detail the bridge, the necessary assumptions made by the engineer, and a brief summary of the results of each segment of the calculations. Submittal of volumes of computer runs is not necessary. Please submit these electronically as PDF files.

- Schedule Delivery

The timelines given earlier in this document should be followed and met. Deductions in points will occur for any missed deadlines without OB&S approval. The most critical of all dates is our turn-in to Contracts. If this date is missed and the letting forced to slip, a significant deduction will be given. Schedule Delivery also applies to timely review of construction issues and shop drawings.

- Accelerated Schedule

An allowance of extra points will be awarded if the schedule is accelerated from that given in the Agreement and delivery met. The degree of addition points will reflect the effort required to speed production.

- Administration

The Administration rating applies to providing problem-free invoices with current format, referenced by the Agreement, as well as adherence to financial limits of the Agreement. Invoicing is also used as a communication mechanism to monitor progress throughout development. Waiting an extended period to report progress would be considered inappropriate, as would minimal commentary on work completed to date and

work anticipated. Should there be any errors or omissions hours, invoices should document the hours as not billed.

- Score

The maximum possible score is 100 points. The accelerated schedule bonus does not take the score over 100, but can offset other deficiencies.

Evaluations remain on file for a period of ten years from the letting date or in other instances, the date of work acceptance. Evaluation scores are used to distinguish between levels of performance of firms doing business with the OB&S. They are used as an indication of past performance, one factor in future consultant selections, in establishing statewide consultant work assignments and one factor in determining fixed fee on future agreements with consultants.